UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,073	07/30/2007	Joachim Lohr	L7725.06118	2010

52989 7590 07/27/2009

Dickinson Wright PLLC
James E. Ledbetter, Esq.
International Square
1875 Eye Street, N.W., Suite 1200
Washington, DC 20006

EXAMINER	
BALAOING, ARIEL A	

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
07/27/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/588,073	LOHR ET AL.	
	Examiner	Art Unit	
	ARIEL BALAOING	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 June 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *38-63* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *38-45,48-54 and 58-63* is/are rejected.

7)☒ Claim(s) *46,47,55-57* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 June 2009* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 38-41,44,45,48-54,59-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over RANTA-AHO et al (US 2005/0048975) in view of TIEDEMANN et al (US 2005/0037771 A1) and HEO et al (US 2004/0160925).

Regarding claim 38, RANTA-AHO discloses a method for communicating information relating to the scheduling of uplink data transmissions, wherein a mobile terminal uses a plurality of processes to transmit uplink data via a channel to a plurality of base stations [**Node B's**] during soft handover of the mobile terminal [**UE device**] in a mobile communication system, and wherein at least one base station of said plurality of base stations schedules uplink data transmissions of the mobile terminal in soft handover (abstract; paragraph 4; active node B provides scheduling of uplink data rate to the UE), the method comprising: determining, at the at least one scheduling base station of said plurality of base stations, scheduling information for the mobile terminal indicative of an allocated maximum amount of uplink resources applicable to the individual processes used for uplink data transmission (paragraph 13, 14; serving NodeB includes a pointer indicating maximum uplink data rate. During soft handover,

uplink connection established for a plurality of nodes and therefore include a plurality of processes), informing at least one other base station of said plurality of base stations on the applicability of allocated maximum amount of uplink resources for uplink data transmissions on the individual processes (paragraph 13, 14, 16; during soft handover, uplink data rate is updated of target Node B including synchronization of pointer in UE and target Node B), and scheduling, by the at least one other base station (paragraph 16, 19, 21; uplink resources are scheduled to the UE based on determined maximum uplink data rate). However, RANTA-AHO does not expressly disclose transmitting from at least one scheduling base station information to at least one other base station of said plurality of base stations; and wherein the scheduling is based on the information received from the scheduling base station. In a similar field of endeavor, TIEDEMANN discloses transmitting from at least one scheduling base station information to at least one other base station of said plurality of base stations, and wherein the scheduling is based on the information received from the scheduling base station (paragraph 93, 96; non serving base station schedules a plurality of mobile stations according to an expected load based on determined resources of mobile stations in soft handover). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify RANTA-AHO to include the teachings of TIEDEMANN, since TIEDEMANN states that such a modification would allow a system to predict changes of a load capacity and optimize base station operations based on these predictions (see paragraph 4). Furthermore, providing resources to a newly added device at a base station would inherently change the amount of resources

available to current devices, and therefore would affect the base stations scheduling of additional resources. Although the combination of RANTA-AHO and TIEDEMANN disclose the use of HARQ during handover (TIEDEMANN - paragraph 37, 102), the combination of RANTA-AHO and TIEDEMANN does not expressly disclose wherein the plurality of processes are HARQ processes to transmit uplink data vie a EUDCH. In the same field of endeavor, HEO discloses wherein a plurality of processes are HARQ processes to transmit uplink data vie a EUDCH in a UMTS system (**212, 222, 213, 223** - Figure 2; paragraph 5, 15, 22). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of RANTA-AHO and TIEDEMANN to include the teachings of HEO, since the use of HARQ and EUDCH within a soft handover region of a UMTS (as shown by HEO) is a conventional and well known process in the art and would therefore be used within the system of either RANTA-AHO or TIEDEMANN when using this protocol. Furthermore see applicant's description of the prior art regarding convention use of HARQ within a UMTS system.

Regarding claim 39, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN, and HEO further discloses further comprising the step of signaling by said at least one scheduling base station the determined scheduling information to the mobile terminal in soft handover to allocate the maximum amount of uplink resources to the mobile terminal for uplink data transmissions on the individual HARQ processes (RANTA-AHO - paragraph 29, 30; HEO discloses the use of HARQ processes in soft handover).

Regarding claim 40, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN, and HEO further discloses wherein the maximum amount of uplink resources applicable on the individual HARQ processes used for uplink data transmissions indicates the maximum data rate or the maximum uplink transmission power ratio that may be used by the mobile terminal for uplink transmissions using the individual HARQ process (RANTA-AHO - paragraph 30; HEO discloses the use of HARQ processes in soft handover).

Regarding claim 41, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN, and HEO further discloses wherein the at least one scheduling base station schedules uplink data transmissions by controlling the TFCS available to the mobile terminal in soft handover for uplink data transmission or by controlling the uplink transmission power ratio of the mobile terminal (RANTA-AHO - Figure 1; paragraph 3, 32).

Regarding claim 44, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN, and HEO further discloses wherein the indicated allocated applicability of maximum amount of uplink resources for uplink data transmissions on the individual HARQ processes is transported using control signaling (RANTA-AHO - paragraph 30; scheduling command. HEO discloses the use of HARQ processes in soft handover).

Regarding claim 45, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN,

and HEO discloses wherein the scheduling base station determines, signals and indicates the applicability of allocated maximum amount of uplink resources for uplink data transmissions on the individual HARQ processes for the mobile terminal in soft handover each time the mobile terminal in soft handover is scheduled (RANTA- AHO - paragraph 34; control base stations indicates scheduling during handover. HEO discloses the use of HARQ processes in soft handover).

Regarding claim 48, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of The combination of RANTA-AHO, TIEDEMANN, and HEO further discloses wherein the plurality of base stations defines the active set of the mobile terminals in soft handover and wherein the method further comprises the steps of adding a base station to the active set of the mobile terminals and signaling the applicability of allocated amount of uplink resources for uplink data transmissions on the individual HArQ processes for the mobile terminal in soft handover to said added base station by the serving radio network controller [**controller**] (TIEDEMANN - paragraph 38, 39, 44; active set of the mobile terminal based on sufficient signal measurements. Since measurements are provided to base stations in active set, newly added base stations would be provided resource information. HEO discloses the use of HARQ processes in soft handover).

Regarding claim 49, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of The combination of RANTA-AHO, TIEDEMANN, and HEO further discloses wherein information for signaling of the applicability of maximum amount of uplink resources for uplink data transmissions on

the individual HARQ to said added base station is comprised within a message communicated during the active set update procedure (TIEDEMANN - paragraph 38, 39, 44; when active set is updated, resource information can be provide to non-active base station on list. HEO discloses the use of HARQ processes in soft handover).

Regarding claim 50, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN, and HEO further discloses wherein one base station of said plurality of base stations schedules uplink data transmissions of the mobile terminal in soft handover to all base stations of said plurality of base stations (RANTA-AHO - paragraph 31; controlling scheduling cell controls the uplink data rate).

Regarding claim 51, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN, and HEO discloses wherein each of said base stations schedules uplink data transmissions of the mobile terminal in soft handover to the respective one of said plurality of base stations (TIEDEMANN - abstract; uplink resources controlled by each base station). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify RANTA-AHO to include the teachings of TIEDEMANN, since TIEDEMANN states that such a modification would improve efficiency of the system by reducing delays caused by communication with a central controller (see abstract).

Regarding claim 52, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN,

and HEO further discloses wherein each of the plurality of base stations determines scheduling information for the mobile terminal indicative of an allocated maximum amount of uplink resources for uplink data transmission on the individual HARQ processes allocated to the mobile terminal by the respective base station (TIEDEMANN - abstract), and signals the determined scheduling information to the mobile terminal in soft handover to allocate the maximum amount of uplink resources for uplink data transmissions using the individual HARQ processes to the terminal for uplink data transmission to the respective base station (RANTA-AHO - paragraph 29, 30; HEO discloses the use of HARQ processes in soft handover).

Regarding claim 53, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN, and HEO further discloses choosing by a mobile terminal the lowest assigned maximum amount of uplink resources for uplink data transmission using the individual HARQ processes for uplink transmissions to all base stations of the plurality of base stations (paragraph 29, 30; lowest assigned maximum corresponds to maximum uplink rate. HEO discloses the use of HARQ processes in soft handover).

Regarding claim 54, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN, and HEO further discloses further comprising the step of forming by the mobile terminal a combined maximum amount of uplink resources on the assigned maximum amounts of uplink resources for uplink data transmissions using the HARQ processes, which is used by the mobile terminal for uplink transmissions to all base stations of the plurality

of base stations (paragraph 29, 30; maximum uplink rate set by the controlling Node B; HEO discloses the use of HARQ processes in soft handover).

Regarding claim 59, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN, and HEO further discloses wherein the maximum allocated amount of uplink resources for uplink data transmissions on the individual HARQ processes is signaled from a base station to the mobile terminal via a shared channel or a dedicated channel (TIEDEMANN – paragraph 27; forward link would inherently require a shared or dedicated channel for wireless transmission; HEO discloses the use of HARQ processes in soft handover).

Regarding claim 60, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN, and HEO discloses wherein the transmitted uplink data is carried by an E-DCH to transmit uplink data (HEO - **212, 222, 213, 223** - Figure 2; paragraph 5, 15, 22).

Regarding claim 61, RANTA-AHO teaches a mobile communication system communicating information relating to the scheduling of uplink data transmissions, wherein the communication system comprises: a mobile terminal [**UE device**] that uses a plurality of processes to transmit uplink data on a channel of a system to a plurality of base stations [**Node B**] during soft handover of the mobile terminal in the mobile communication system, and said plurality of base stations, wherein at least one base station of said plurality of base stations schedules uplink data transmissions of the mobile terminal in soft handover (abstract; paragraph 4; active node B provides

scheduling of uplink data rate to the UE), wherein the at least one scheduling base station of said plurality of base stations determines scheduling information for the mobile terminal indicative of an allocated maximum amount of uplink resources applicable to processes used for uplink data transmission and is operable to inform at least one other base station of the plurality of base stations of the allocated maximum amount of uplink resources for uplink data transmissions on the individual processes (paragraph 13, 14; serving NodeB includes a pointer indicating maximum uplink data rate), and wherein the at least one other base station schedules at least one mobile terminal in communication with a respective base station using the indicated maximum amount of uplink resources allocated to said mobile terminal in soft handover (paragraph 16, 19, 21; uplink resources are scheduled to the UE based on determined maximum uplink data rate). However, RANTA-AHO does not expressly disclose transmitting from at least one scheduling base station information to at least one other base station of said plurality of base stations; and wherein the scheduling is based on the information received from the scheduling base station. In a similar field of endeavor, TIEDEMANN discloses transmitting from at least one scheduling base station information to at least one other base station of said plurality of base stations, and wherein the scheduling is based on the information received from the scheduling base station (paragraph 93, 96; non serving base station schedules a plurality of mobile stations according to an expected load based on determined resources of mobile stations in soft handover). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify RANTA-AHO to include the

teachings of TIEDEMANN, since TIEDEMANN states that such a modification would allow a system to predict changes of a load capacity and optimize base station operations based on these predictions (see paragraph 4). Furthermore, providing resources to a newly added device at a base station would inherently change the amount of resources available to current devices, and therefore would affect the base stations scheduling of additional resources. Although the combination of RANTA-AHO and TIEDEMANN disclose the use of HARQ during handover (TIEDEMANN - paragraph 37, 102), the combination of RANTA-AHO and TIEDEMANN does not expressly disclose wherein the plurality of processes are HARQ processes to transmit uplink data vie a EUDCH. In the same field of endeavor, HEO discloses wherein a plurality of processes are HARQ processes to transmit uplink data vie a EUDCH in a UMTS system (**212, 222, 213, 223** - Figure 2; paragraph 5, 15, 22). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of RANTA-AHO and TIEDEMANN to include the teachings of HEO, since the use of HARQ and EUDCH within a soft handover region of a UMTS (as shown by HEO) is a conventional and well known process in the art and would therefore be used within the system of either RANTA-AHO or TIEDEMANN when using this protocol. Furthermore see applicant's description of the prior art regarding convention use of HARQ within a UMTS system.

Regarding claim 62, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN, and HEO further discloses wherein the at least one scheduling base station transmits

the determined scheduling information to the mobile terminal in soft handover to allocate the maximum amount of uplink resources to the terminal applicable to the HARQ processes used to uplink data transmissions (RANTA-AHO - paragraph 29, 30; HEO discloses the use of HARQ processes in soft handover).

Regarding claim 63, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN, and HEO further discloses wherein the other base stations of said plurality of base stations schedule at least one other mobile terminal in communication with a respective base station taking into account the indicated applicability to the HARQ processes for said mobile terminal in soft handover (TIEDEMAN - paragraph 93, 96; HEO discloses the use of HARQ processes in soft handover).

4. Claims 42, 43, 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over RANTA-AHO et al (US 2005/0048975) in view of TIEDEMANN et al (US 2005/0037771 A1) and HEO et al (US 2004/0160925) and further in view of LEGG et al (US 6,414,947).

Regarding claim 42, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN, and HEO further discloses wherein indicating the allocated applicability of maximum amount of uplink resources for uplink data transmission on the individual HARQ processes comprises: signaling the allocated applicability of maximum amount of resources from the at least one scheduling base and informing the allocated maximum amount of uplink resources for uplink transmissions on the individual HARQ processes

to the other base stations (RANTA-AHO – paragraph 29, 30). However, the combination of RANTA-AHO and TIEDEMANN does not expressly disclose wherein the indicated allocated maximum amount of uplink resources is transported via a resource network controller controlling radio resources of the mobile terminal in soft handover. In the same field of endeavor, LEGG discloses wherein an indicated allocated amount of uplink resources is transported via an radio network controller controlling radio resources of the mobile terminal in soft handover, and wherein indicating the allocated amount of uplink resources comprises the steps of: signaling the allocated maximum amount of resources from the at least one scheduling base station to a network entity controlling radio resources of said mobile terminal in soft handover, and forwarding the allocated maximum amount of resources to the other base stations by the radio resource controlling entity (col. 5, line 55-60; col. 6,line 15-34; resources allocated for a mobile in soft handover using associated cell determination information forwarded from the network controller). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of RANTA-AHO, TIEDEMANN, and HEO to include the teachings of LEGG, since the use of a network controller provides various configuration processing and coordination between various network elements and would allow control functions to be implemented between connected network elements.

Regarding claim 43, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. The combination of RANTA-AHO, TIEDEMANN, HEO, and LEGG further discloses wherein the serving radio network controller

determines whether to forward the applicability of allocated maximum amount of uplink resources for uplink data transmissions on the individual HARQ processes to a respective one of said other base stations based on the cell interference within the radio cell controlled by the respective one of said other base stations (TIEDEMANN - paragraph 38, 39, 44; TIEDEMANN describes forwarding of information based on an Active base station set of the mobile station which is formed using signal strength indicators (i.e. interference), while LEGG teaches forwarding of information using a radio network entity. HEO discloses the use of HARQ processes in soft handover).

Regarding claim 58, see the rejections of the parent claim concerning the subject matter this claim is dependent upon. However, the combination of RANTA-AHO, TIEDEMANN, and HEO does not expressly disclose further comprising requesting by a serving radio network controller from at least one base station of said plurality of base station to signal the maximum amount of resources allocated to the mobile terminal in soft handover to said radio resource controlling entity. In a similar field of endeavor, LEGG teaches requesting by a Radio Network Controller controlling the radio resources of a mobile terminal in soft handover from at least one base station of a plurality of base station to signal the maximum amount of resources allocated to the mobile terminal in soft handover to said Radio Network Controller (col. 5, line 55-60; col. 6,line 15-34; resources allocated for a mobile in soft handover using associated cell determination information forwarded from the network controller). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of RANTA-AHO and TIEDEMANN to include the

teachings of LEGG, since the use of a network controller provides various configuration processing and coordination between various network elements and would allow control functions to be implemented between connected network elements.

Allowable Subject Matter

5. Claims 46, 47, and 55-57 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: Claims 46, 47, 55-57 are allowable in view of the reasons for allowance stated in the Office Action filed 03/10/2009.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARIEL BALAOING whose telephone number is (571)272-7317. The examiner can normally be reached on Monday-Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, V. Paul Harper can be reached on (571) 272-7605. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/VINCENT P. HARPER/
Supervisory Patent Examiner, Art Unit 2617

/Ariel Balaoing/
Examiner, Art Unit 2617

/A. B./
Examiner, Art Unit 2617